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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 February 2006</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-16</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-16</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☒ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>02/07/2006</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3.   Claim 1 recites the limitation "wherein the first number is larger that the second number" in line 13 of page 22 which makes the claim indefinite since it is unclear whether it is pointing to the limitations of "a first sequence number" in line 11-12 on page 22 or "a first number of second data packets" in line 10 on page 22.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005) Section IV, reads as follows:

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The new IEEE Standard

Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive

material" includes but is not limited to music, literary works and compilation or mere arrangement

of data.

When functional descriptive material is recorded on some computer-readable medium it

becomes structurally and functionally interrelated to the medium and will be statutory in most

cases since use of technology permits the function of the descriptive material to be realized.

Compare In re Lowry, 32 F. 3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data

structure stored on a computer readable medium that increases computer efficiency held statutory)

and Warmerdam, 33 F. 3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data

structure stored in memory to a data structure per se held nonstatutory.)

In contrast, a claimed computer-readable medium encoded with a computer program is a

computer element which defines structural and functional interrelationships between the computer

program and rest of the computer which permit the computer program's functionality to be realized,

and is thus statutory. See Lowry, 32 F. 3d at 1583-84, 32 USPQ2d at 1035.

2.   Claim 16 is rejected under 35 U.S.C. 101 because the claimed invention is directed to

non-statutory subject matter as follows.

Claim 16 defines a software program embodying functional descriptive material.

However, the claim does not define a computer-readable medium or memory and is thus non-

statutory for that reason (i.e., "When functional descriptive material is recorded on some

computer-readable medium it becomes structurally and functionally interrelated to the

medium and will be statutory in most cases since use of technology permits the function of

the descriptive material to be realized" - Guidelines Annex IV). That is, the scope of the

presently claimed computer program can range from paper on which the program is written,

to a program simply contemplated or memorized by a person. The examiner suggests

amending the claim to embody the program on "computer-readable medium" or equivalent in

order to make the claim statutory. Any amendment to the claim should be commensurate

with its corresponding disclosure.

 The USPTO "Interim Guidelines for Examination of Patent Applications for Patent

Subject Matter Eligibility" (Official Gazette notice of 22 November 2005) Section IV,

reads as follows:

  While abstract ideas, natural phenomena, and laws of nature are not eligible for patenting,

methods and products employing abstract ideas, natural phenomena, and laws of nature to perform

a real-world function may well be. In evaluating whether a claim meets the requirements of section

101, the claim must be considered as a whole to determine whether it is for a particular application

of abstract idea, natural phenomenon, or law of nature, rather than for the abstract idea, natural

phenomenon, or law of nature itself.

  For claims including such excluded subject matter to be eligible, the claim must be for a

practical application of the abstract idea, law of nature, or natural phenomenon. Diehr, 450 U.S. at

187, 209 USPQ at 8 ("application of a law of nature or mathematical formula to a known structure

or process may well be deserving of patent protection."); Benson, 409 U.S. at 71, 175 USPQ at 676

(rejecting formula claim because it has no substantial practical application").

To satisfy section 101 requirements, the claim must be for a practical application of Sec. 101

judicial exception, which can be identified in various ways:

  The claimed invention "transforms" an article or physical object to a different state or

thing.

  The claimed invention otherwise produces a useful, concrete and tangible result, based on

the factors discussed below.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as
> set forth in section 102 of this title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the art to which said subject
> matter pertains. Patentability shall not be negatived by the manner in which the invention was
> made.

6.   Claims 1-7 and 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Malkamaki (US 7,310,336) in view of Wu (US 7,298,730).

        Claim 1, Malkamaki discloses a method of transmitting first data packets from a

transmitter to a receiver **(Abstract)**, Malkamaki discloses wherein the first data packets are

transmitted from the transmitter to the receiver in containers **(Col 5: 12-13, where**

Malkamaki discloses data blocks which encapsulate PDUs and Fig. 1: 11 and 12, where

Malkamaki discloses a sender and a receiver), Malkamaki discloses wherein each of the

containers is provided with a sequence number **(Col 5: 15-20, where Malkamaki discloses**

transmission using sequence numbers), Malkamaki discloses determining a transmission

abortion where a transmission of a first container which comprises a first number of second

data packets of the first data packets is aborted **(Col 8: 14-20, where Malkamaki discloses**

not transmitting a new data block without a proper acknowledgement and Col 6: 5-7,

where Malkamaki discloses a transmission of data blocks); Malkamaki discloses wherein the

first container is provided with a first sequence number **(Col 6: 1, where Malkamaki**

discloses assigning a new sequence number).

        Malkamaki does not disclose selecting *a second number of third data packets* from the

first number of second data packets; wherein the first number is larger than the second

number; forming a second container comprising the second number of third data packets; and

transmitting the second container with the first sequence number.

In an analogous art, Wu discloses a second number of third data packets from the first

number of second data packets; wherein the first number is larger than the second number

(Col 4: 16-26, where Wu discloses repackaging unACKed MAC-hs PDUs into smaller size

with the RLC PDUs in the previous MAC-hs PDU; a subset of MAC-hs SDU); Wu discloses

forming a second container comprising the second number of third data packets; and

transmitting the second container with the first sequence number (Fig. 7: 25 and 27, where

Wu, discloses assigning a Transport sequence number (TSN) of the older PDU to the new

PDU and transmitting the PDU). Therefore, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify Malkamaki with the teachings of

Wu so as to ensure greater robustness (Col 2: 2-3).

Claim 13, Malkamaki discloses a data transmission system for transmitting first data

packets from a transmitter to a receiver (Abstract), Malkamaki discloses wherein the first

data packets are transmitted from the transmitter to the receiver in containers (Col 5: 12-

13, where Malkamaki discloses data blocks which encapsulate PDUs and Fig. 1: 11 and 12,

where Malkamaki discloses a sender and a receiver), Malkamaki discloses wherein each of

the containers is provided with a sequence number (Col 5: 15-20, where Malkamaki

discloses transmission using sequence numbers), Malkamaki discloses wherein the data

transmission system is adapted to perform the following operation: determining a

transmission abortion where a transmission of a first container which comprises a first number

of second data packets of the first data packets is aborted (Col 8: 14-20, where Malkamaki

discloses not transmitting a new data block without a proper acknowledgement and Col 6:

5-7, where Malkamaki discloses a transmission of data blocks); Malkamaki discloses wherein

the first container is provided with a first sequence number (**Col 6: 1, where Malkamaki**

discloses assigning a new sequence number).

Malkamaki does not disclose selecting a second number of third data packets from the

first number of second data packets; wherein the first number is larger than the second

number; forming a second container comprising the second number of third data packets; and

transmitting the second container with the first sequence number.

In an analogous art, Wu discloses selecting a second number of third data packets from

the first number of second data packets; wherein the first number is larger than the second

number (**Col 4: 16-26, where Wu discloses repackaging unACKed MAC-hs PDUs into smaller**

size with the RLC PDUs in the previous MAC-hs PDU; a subset of MAC-hs SDU); Wu discloses

forming a second container comprising the second number of third data packets; and

transmitting the second container with the first sequence number (**Fig. 7: 25 and 27, where**

Wu, discloses assigning a Transport sequence number (TSN) of the older PDU to the new

PDU and transmitting the PDU). Therefore, it would have been obvious to one of ordinary

skill in the art at the time the invention was made to modify Malkamaki with the teachings of

Wu so as to ensure greater robustness (**Col 2: 2-3**).

Claim 14, Malkamaki discloses a transmitter for a data transmission system, wherein

the transmitter is adapted to transmit first data packets to a receiver (**Abstract**), Malkamaki

discloses wherein the first data packets are transmitted from the transmitter to the receiver

in containers (**Col 5: 12-13, where Malkamaki discloses data blocks which encapsulate**

PDUs and Fig. 1: 11 and 12, where Malkamaki discloses a sender and a receiver),

Malkamaki discloses wherein each of the containers is provided with a sequence number (**Col**

5: 15-20, where Malkamaki discloses transmission using sequence numbers), Malkamaki

discloses wherein the transmitter is adapted to determine a transmission abortion where a

transmission of a first container which comprises a first number of second data packets of the

first data packets is aborted **(Col 8: 14-20, where Malkamaki discloses not transmitting a**

new data block without a proper acknowledgement and Col 6: 5-7, where Malkamaki

discloses a transmission of data blocks); Malkamaki discloses wherein the first container is

provided with a first sequence number **(Col 6: 1, where Malkamaki discloses assigning a new**

sequence number).

> **Comment [MBK3]:** arg-it has been already stated that data blocks encapsulates RLC PDUs

Malkamaki does not disclose select a second number of third data packets from the

first number of second data packets; wherein the first number is larger than the second

number; form a second container comprising the second number of third data packets; and

transmit the second container with the first sequence number to the receiver.

In an analogous art, Wu discloses select a second number of third data packets from

the first number of second data packets; wherein the first number is larger than the second

number packets **(Col 4: 16-26, where Wu discloses repackaging unACKed MAC-hs PDUs into**

smaller size with the RLC PDUs in the previous MAC-hs PDU; a subset of MAC-hs SDU); Wu

discloses form a second container comprising the second number of third data packets; and

transmit the second container with the first sequence number to the receiver **(Fig. 7: 25 and**

27, where Wu, discloses assigning a Transport sequence number (TSN) of the older PDU to

the new PDU and transmitting the PDU). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify Malkamaki with the

teachings of Wu so as to ensure greater robustness **(Col 2: 2-3).**

Claim 15, Malkamaki discloses a receiver for a data transmission system, wherein the receiver is adapted to receive first data packets transmitted from a transmitter (**Abstract**), Malkamaki discloses wherein the first data packets are transmitted from the transmitter to the receiver in containers (**Col 5: 12-13, where Malkamaki discloses data blocks which encapsulate PDUs and Fig. 1: 11 and 12, where Malkamaki discloses a sender and a receiver**), Malkamaki discloses wherein each of the containers is provided with a sequence number (**Col 5: 15-20, where Malkamaki discloses transmission using sequence numbers**), Malkamaki discloses wherein a first container has been received by the receiver including a first number of second data packets (**Fig. 4: 44, where Malkamaki discloses reception by the MAC-hs service of the receiver**), Malkamaki discloses the first container having a first sequence number (**Col 6: 1, where Malkamaki discloses assigning a new sequence number**).

Malkamaki does not disclose wherein the receiver is adapted to receive a second container including a second number of second data packets; wherein the first number is larger than the second number; wherein the second container has the first sequence number.

In an analogous art, Wu discloses wherein the receiver is adapted to receive a second container including a second number of second data packets; wherein the first number is larger than the second number(**Col 4: 16-26, where Wu discloses repackaging unACKed MAC-hs PDUs into smaller size with the RLC PDUs in the previous MAC-hs PDU; a subset of MAC-hs SDU**); Wu discloses wherein the second container has the first sequence number (**Fig. 7: 25 and 27, where Wu, discloses assigning a Transport sequence number (TSN) of the older PDU to the new PDU and transmitting the PDU**). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Malkamaki with the teachings of Wu so as to ensure greater robustness (**Col 2: 2-3**).

Claim 16, Malkamaki discloses a software program for performing a transmission of

first data packets from a transmitter to a receiver (**Abstract, it is understood by one of**

ordinary skill in the art that computing device as disclosed require software instructions

to function), Malkamaki discloses wherein the first data packets are transmitted from the

transmitter to the receiver in containers (**Col 5: 12-13, where Malkamaki discloses data**

blocks which encapsulate PDUs and Fig. 1: 11 and 12, where Malkamaki discloses a sender

and a receiver), Malkamaki discloses wherein each of the containers is provided with a

sequence number (**Col 5: 15-20, where Malkamaki discloses transmission using sequence**

numbers), the software program performing the steps of: Malkamaki discloses determining a

transmission abortion where a transmission of a first container which comprises a first number

of second data packets of the first data packets is aborted (**Col 8: 14-20, where Malkamaki**

discloses not transmitting a new data block without a proper acknowledgement and Col 6:

5-7, where Malkamaki discloses a transmission of data blocks); Malkamaki discloses wherein

the first container is provided with a first sequence number (**Col 6: 1, where Malkamaki**

discloses assigning a new sequence number).

> **Comment [MBK4]:** arg-it has been already stated that data blocks encapsulates RLC PDUs

Malkamaki does not disclose selecting a second number of third data packets from the

first number of second data packets; wherein the first number is larger than the second

number; forming a second container comprising the second number of third data packets; and

transmitting the second container with the first sequence number.

In an analogous art, Wu discloses selecting a second number of third data packets from

the first number of second data packets; wherein the first number is larger than the second

number (**Col 4: 16-26, where Wu discloses repackaging unACKed MAC-hs PDUs into smaller**

size with the RLC PDUs in the previous MAC-hs PDU; a subset of MAC-hs SDU); Wu discloses

forming a second container comprising the second number of third data packets; and

transmitting the second container with the first sequence number **(Fig. 7: 25 and 27, where Wu, discloses assigning a Transport sequence number (TSN) of the older PDU to the new PDU and transmitting the PDU).** Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Malkamaki with the teachings of Wu so as to ensure greater robustness **(Col 2: 2-3).**

Claim 2, Malkamaki discloses wherein a third number of fourth data packets which are left over when forming the second number of third data packets, is deleted **(Col 2: 55-59, where Malkamaki discloses that it is well known in the art to delete RLC PDUs).**

Claim 3, Malkamaki discloses wherein the second container provides stronger forward error correction than the first container **(Col6: 35-39, where Malkamaki discloses coding).**

Claim 4, Malkamaki does discloses wherein the third data packets are selected from the second data packets on the basis of the order of the second data packets according to which they are arranged in the first container **(Col 2: 55-61, where Malkamaki discloses that is well known in the art that RLC-PDUs are delivered in order).**

Claim 5, Malkamaki does not disclose wherein the third data packets are selected from the second data packets in accordance with an urgency with which they are required at the receiver.

In an analogous art, Wu discloses wherein the third data packets are selected from the second data packets in accordance with an urgency with which they are required at the receiver **(Col 5: 48-55, where Wu discloses priority of RLC).** Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify

Malkamaki with the teachings of Wu so as to allow for servicing priority queues **(Col 1: 31-**

33).

Claim 6, Malkamaki discloses wherein the second and third data packets are service

data units of a first protocol layer, which forms the first and second containers **(Col 5: 64-Col**

6: 2, where Malkamaki discloses encapsulation of the RLC PDUs and MAC-hs module);

Malkamaki discloses wherein the first, second and third data packets are segmented from a

plurality of fifth data packets in the transmitter **(Col 5: 65, where Malkamaki discloses**

sequence of RLC PDUs); Malkamaki discloses wherein the fifth data packets are service data

units of a second protocol layer which is at a level above the first protocol layer **(Col 2: 61-**

62, where Malkamaki discloses RLC-SDU, RLC is a layer above the MAC-hs layer);

Malkamaki discloses wherein sixth data packets are received at the receiver **(Col 6: 18-20,**

where Malkamaki discloses resending erroneously received data); Malkamaki discloses

wherein the fifth data packets are rebuilt from selected ones of the sixth data packets; and

wherein the third data packets are selected such that the fifth data packets can be rebuilt at

the receiver **(Col 6: 59-65, where Malkamaki discloses soft combining previous and current**

data blocks).

Claim 7, Malkamaki discloses wherein the second and third data packets are service

data units of a first protocol layer, which forms the first and second containers **(Col 5: 64-Col**

6: 2, where Malkamaki discloses encapsulation of the RLC PDUs and MAC-hs module);

Malkamaki discloses wherein the first, second and third data packets are segmented from a

plurality of fifth data packets in the transmitter **(Col 5: 65, where Malkamaki discloses**

sequence of RLC PDUs); Malkamaki discloses wherein the fifth data packets are service data units of a second protocol layer which is at a level above the first protocol layer (**Col 2: 61-62, where Malkamaki discloses RLC-SDU, RLC is a layer above the MAC-hs layer**); Malkamaki discloses wherein the third data packets are selected such that they belong to fifth data packets for which seventh data packets have been received earlier at the receiver (**Col 6: 28-31, where Malkamaki discloses holding all blocks until all earlier blocks have arrived**).

     Claim 9, Malkamaki does not disclose wherein the third data packets are selected from the second data packets such that a loss of synchronization of a serial number, which forms a time varying input for a ciphering and deciphering, between the transmitter and the receiver is avoided.

     In an analogous art, Wu discloses wherein the third data packets are selected from the second data packets such that a loss of synchronization of a serial number, which forms a time varying input for a ciphering and deciphering, between the transmitter and the receiver is avoided (**Col 5: 33-55, where Wu discloses selection of PDUs to avoid loss of synchronization and also discloses HFN**). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Malkamaki with the teachings of Wu so as to avoid the loss of synchronization (**Col 5: 35-36**).

     Claim 10, Malkamaki discloses wherein the third data packets are selected such that a third number of logical channels affected by the reduction of the first number of second data packets to the second number of third data packets is minimized (**Col 5: 35-37, where Malkamaki discloses using the same process**).

Claim 11, Malkamaki discloses wherein the second data packets which were not selected as third data packets are transmitted to the receiver in a third container with a third sequence number **(Col 7: 6-11, where decoding is correct, and hence no retransmission of the PDU is required).**

Claim 12, Malkamaki discloses wherein the method is applied for a control of a retransmission of the HARQ protocol on the High Speed Downlink Shared Channel in UMTS **(Col 1: 15-25, 39-42, where Malkamaki discloses HARQ, WCDMA and HS-DSCH).**

7.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Malkamaki (US 7,310,336) in view of Wu (US 7,298,730) in view of Makansi et al. (US 6,771,597 herein Makansi).

Claim 8, Malkamaki in view of Wu does not disclose wherein the third data packets are selected from the second data packets at random.

Makansi discloses wherein the third data packets are selected from the second data packets at random **(Col 5: 65-Col 6: 7, where Makansi discloses transmitting in random order).** Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Malkamaki in view of Wu with the teachings of Makansi so as to greater security to transmitted data and make the message less susceptible **(Col 2: 8-11, 25-26).**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MEHMOOD B. KHAN whose telephone number is (571)272-9277. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. B. K./
Examiner, Art Unit 2617

/Lester Kincaid/
Supervisory Patent Examiner, Art Unit 2617